

Monsanto

FROM R. L. Nelson, Sauget, Illinois
(NAME - LOCATION - PHONE)

DATE August 2, 1984
SUBJECT Review Of South Trunk Sewer Design
REFERENCE : P. H. Wise Letter Of July 10, 1984
TO : W. L. Smull

In reply to P. Wise's letter I offer the following comments.

Item 1

A double brick course below the normal operating level in the manholes is not required by design. The depth of our manholes does not warrant a double brick course. Our design calls for brick arches around the pipe to distribute the load. A "bull's-eye" or collar around the entire pipe is an unnecessary expense and adds nothing to the structural integrity of the brickwork on our design.

Item 2

The pipe currently extends into the manhole 9" at the center line and 2" at the junction of pipe and wall. I do not see any benefit to extending the pipe further into the manhole.

Item 3

The best design practice dictates dishing the bottom of large acid brick manholes to keep the brick in compression. Likewise, round manholes were utilized versus square or rectangular manholes for the same reason.

Item 4

The use of "doubles" (8"x3-3/4"x4 1/2") was eliminated from this project because they do not meet ASTM Type L specification for acid brick. The current manufacturers of "doubles" classify them as modified Type L. These brick are not as chemically resistant as Type L singles.

Item 5

I am not certain what is meant by "parged" membrane. I take exception to the statement our membrane design will not work. The Furalac membrane specified is a common membrane system utilized in acid brick construction. The system is a built-up membrane with a finished thickness of 3/16".

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Item 6

Furan is an acid catalyzed material and will attack concrete. An asphaltic membrane serves a dual purpose: it protects the concrete from attack during the curing of the furan and provides a secondary barrier to acids.

Item 7

We have evaluated many materials, methods and latest design techniques for "acid proof" construction. Rezclad, a product of Atlas Mineral And Chemicals, Inc. was unsuccessfully demonstrated, in a controlled environment, by Atlas personnel. This product is not acceptable by our standards.

Item 8

Our design calls for all interior concrete, be it manhole walls or encasement, to be protected by our two membrane system; further the furan membrane is extended on to the pipe projecting into the manhole.

Item 9

Our specifications call for all pipe mating surfaces to receive a light sand blast.

I find it very interesting that items 4, 5, 6, and 7 are the very items we have discussed at length with Atlas personnel. During the discussion and demonstrations we informed Atlas of the unacceptability of these items.

I would be delighted to discuss any questions or design details with Paul Weis if he desires.


R. L. Nelson

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